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EXAMINER	
PAUL, DISLER	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/684,208	DEVANTIER ET AL.	
	Examiner	Art Unit	
	Disler Paul	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-68 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-68 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 8/13/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

2. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

1. Claims 1,16,48,51,54 are provisionally rejected on the ground of statutory double patenting as being unpatentable over claim 1,12,23,53,72,73 of copending Application No. *10,684,043* for all the independent claims.

2. Similarly, claims 4-15 are provisionally rejected on the ground of statutory type double patenting as being unpatentable over claim 3,5,31-32,8, 34-40 of copending Application No. *10,684,043* for all the independent claims.

3. Similarly, claims 20-21,{25-30} are provisionally rejected on the ground statutory double patenting as being unpatentable over claims 3,5; {31-32,8, 34-36} of copending Application No. *10,684,043* for all the independent claims.

4. Similarly, claims 49,52,67 are provisionally rejected on the ground statutory double patenting as being unpatentable over claim 28 of copending Application No. *10,684,043* for all the independent claims.

5. Similarly, claims 62-65 are provisionally rejected on the ground of statutory double patenting as being unpatentable over claims 3,31,34,40 of copending Application *No. 10,684,043* for all the independent claims.

This is a provisional statutory double patenting rejection because the claims have not been patented and the *claims are all identical* with no limitations differences.

6. Claims 1,16,48,51,54 are provisionally rejected on the ground of statutory -type double patenting as being unpatentable over claim 1,15,27,81,105,106-107 of copending Application No. *10,684,222* for all the independent claims.

This is a provisional statutory double patenting rejection because the claims have not been patented and the case [10,684,222] is just simply a broader version of the application claims - [i.e. speaker configuration-speaker locations].

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 1-8,11-12,14,16-27,30-32,34,42-44, 46-47,50,53-63,66-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabinowitz et al. ("2003/0179891 A1") and saito ("6,061,648").

Re claim 1, Rabinowitz et al. disclose a method for selecting a number of speakers for an audio system ("*fig.1,3-5; page 2[0021] line 24-29/speakers selectively placed in varying listening positions*"), the method comprising: generating acoustic signals from at least one loudspeaker placed at potential loudspeaker locations; recording transfer functions at a plurality of listening positions for the generated acoustic signals ("*page 1[0003] line 8-14; fig.1/microphones (16) pick up generated signals received via (14-1….14-n) and stored at (20); all data stored from plurality of listening position as fig.3; and page 3[0027] line 11-14*"); determining at least one potential number of speakers ("*fig.1/(14-1-14-6/selected number of speakers at varying position is already known*"); modifying the transfer functions based on the potential number of speakers in order to generate predicted transfer functions ("*Page 4/(line 29-32/frequency response for the combine output speakers is possible and further predetermined frequency response in page 2[0012] line 5-6*"), statistically analyzing across at least one frequency of the predicted transfer functions for the plurality of listening positions ("*FIG.1(18/ with more specifically fig.4(s56-58)/equalizing compared/analyzed to stored*

desired speaker characteristic location and update with filter; page page 5[0035] line 3-8") and the selecting at least one loudspeaker location("*page 3/[0024]*').

While, Rabinowitz teach of the above, However, Rabinowitz fail to disclose of the further limitation wherein selecting at least one loudspeaker location based on the statistical analysis. However, Saito disclose a configuration of speakers wherein the limitation wherein the selecting at least one loudspeaker location based on the statistical analysis ("*fig.4; col.6 line 48-57-for selected speaker among the plurality*") for the purpose of having the capability of encoding and decoding speech signals at a high compression ratio. Thus, taking the combined teaching of Rabinowitz et al. now Saito as a whole, it would have been obvious for one of the ordinary skill in the art to modify Rabinowitz et al. by incorporating the limitation wherein the selecting at least one loudspeaker location based on the analysis for the purpose of having the capability of encoding and decoding speech signals at a high compression ratio.

Re claim 2, the method of claim 1, where determining at least one potential number of speakers comprises selecting a minimum and a

maximum potential number of speakers ("*Saito,fig.4; col.6 line 48-57-for selected speaker among the plurality*").

Re claim 3, the method of claim 1, where the potential numbers of speakers is selected to be less than or equal to an integer("*Saito,fig.2(24), col.6 line 48-57; col.7 line 40-43*").

Re claim 4, the method of claim 1, where modifying the transfer functions comprises: determining potential combinations of speakers at potential speaker locations, the potential combinations being equal to at least one of the potential number of speakers; and for each listening position, combining the transfer functions for each of the potential combinations to generate predicted transfer functions ("*Rabinowitz,Page 4[0030]-line 29-32*").

Re claim 5, the method of claim 1, where statistically analyzing the predicted transfer functions comprises analyzing frequencies of the predicted transfer functions ("*page 1[0003] line 14-17; fig.1(18-19)*"). However, the combined teaching of Rabinowitz and Saito et al. as a whole, never limit the inventions by specifying wherein the analyzing frequencies of the transfer function is *below about 120 Hz*. However, Official Notice is taken that, this limitation is just simply the inventor's preference, thus it would have been obvious for one of the ordinary skill in the art to have incorporated the analyzing

frequencies of the transfer function is *below about 120 Hz* for the purpose of providing equalization pattern in response to the measure frequency response.

Re claim 6, the method of claim 1, where the statistical analysis indicates consistency of the predicted transfer functions across the plurality of listening positions ("*Rabinowitz,page 3[0027] line 20-28/desired/pleasing frequencies to be achieved in all areas*").

Similarly, reclaim 7 has been analyzed and rejected with respect to claim 6 above.

Re claim 8, the method of claim 1, However, the combined teaching of Rabinowitz et al. and Saito as a whole, fail to explicitly disclose of the limitation where the statistical analysis is selected from the group consisting of mean spatial variance, mean spatial standard deviation, mean spatial envelope, and mean spatial maximum average. However, Official Notice is taken that the concept of doing statistical analysis from the group consisting of mean spatial variance, mean spatial standard deviation, mean spatial envelope, and mean spatial maximum average is commonly known in the art, thus it would have been obvious for one of the ordinary skill in the art to have modified Rabinowitz and Saitio as a whole, by incorporating the statistical analysis being selected form the group of mean spatial

variance, mean spatial standard deviation, mean spatial envelope for the purpose of determining the probabilities of occurrences.

Re claims 11,14,27,30-31,34,46-47 have been analyzed and rejected with respect to claim 8.

Re claim 12, the method of claim 1, where the statistical analysis indicates differences in overall sound pressure level among the plurality of listening positions for the predicted transfer functions ("*Rabinowitz, page 1[008] line 3-7; page 1[009] line 5-8; predetermined sound level/amplitude for each locations compared to statistically calculated measure value*").

Re claims 16 has been analyzed and rejected with respect to claim 1.

Re claim 17, the method of claim 16, where recording transfer functions comprises: generating acoustic signals from the speaker placed at each potential speaker position; and recording the transfer functions at the listening position for the generated acoustic signals ("*page 1[0003] line 8-14; fig.1/microphones (16) pick up generated*

signals received via (14-1….14-n) and stored at (20); all data stored from plurality of listening position as fig.3; and page 3[0027] line 11-14").

Re claim 22, the method of claim 16, where recording transfer functions comprises recording at a plurality of listening positions ("*Rabinowitz,fig.3; fig.4(47,50)*"); and where statistically analyzing the predicted transfer functions comprises analyzing the predicted transfer functions across the plurality of listening positions("*FIG.1(18/ with more specifically fig.4(s56-58)/equalizing compared/analyzed to stored desired speaker characteristic location and update with filter; page page 5[0035] line 3-8*").

Re claim 23, the method of claim 22, where analyzing the predicted transfer functions across the plurality of listening positions is as a function of frequency ("*fig.4(48,52)*").

Re claim 24, the method of claim 16, where recording transfer functions comprises recording at a plurality of listening positions; and where statistically analyzing the predicted transfer functions comprises analyzing the predicted transfer functions for each of the plurality of listening positions *("fig.3-4*").

Re claims 18-21 have been analyzed and rejected with respect to claims 2-5 respectively.

Re claims 25-26,32, have been analyzed and rejected with respect to claims 6-7,12 respectively.

Re claim 42, the method of claim 16, where the statistical analysis indicates output of predicted transfer functions("*fig.1(14,16,19)/output measure/stored*").

Re claim 43, the method of claim 42, where output is examined for predetermined frequencies ("*page 2[0012];page 1[0008]/over frequency range*").

Re claim 44, the method of claim 43, However, the combined teaching of Rabinowitz et al. and now Saito as a whole, fail to disclose of the detail of wherein the predetermined frequencies are below 50 Hz. However, official Notice is taken that the limitation of examining for the predetermine frequencies below 50 Hz, is simply the inventor's preference, thus it would have been obvious for one of the ordinary skill in the art to modify Rabinowitz and Saito as a whole, by incorporating the further limitation of examining for the predetermine frequencies below 50 Hz for the purpose of equalizing the audio system.

Re claim 50, the machine readable medium of claim 48, However, Rabinowitz fail to disclose of the further limitation comprising instructions for recommending a specific number of speakers. However, Saito disclose a configuration of speakers wherein the limitation wherein instructions for recommending a specific number of speakers ("*fig.4; col.6 line 48-57-for selected speaker among the plurality*") for the purpose of having the capability of encoding and decoding speech signals at a high compression ratio. Thus, taking the combined teaching of Rabinowitz et al. and now Saito as a whole, it would have been obvious for one of the ordinary skill in the art to modify Rabinowitz et al., by incorporating the limitation wherein the instructions for recommending a specific number of speakers for the purpose of having the capability of encoding and decoding speech signals at a high compression ratio.

Re claim 53 has also been analyzed and rejected with respect to claim 50.

Re claim 54 has been analyzed and rejected with respect to claim 1.

Re claim 55 has been analyzed and rejected with respect to claim 17.

Re claim 56, the method of claim 54, where the potential types of speakers comprises speakers of at least one different quality ("*page 2[0021] line 22-29*").

Re claim 57, has been analyzed and rejected with respect to claim 56 above.

Re claim 58, has been analyzed and rejected with respect to claims 20.

Re claim 59, the method of claim 54, where statistically analyzing the predicted transfer functions comprises analyzing the predicted transfer functions for the at least one listening position ("*fig.3*").

Re claim 60 has been analyzed and rejected with respect to claim 59 above.

Re claim 61, the method of claim 60, where recording the transfer functions comprises: generating the acoustic signals from each type of speaker placed at each potential speaker position; and recording the transfer functions at the plurality of listening positions for the

generated acoustic signals ("*fig.3; fig.4(59); page 3[0027] line 11-14*").

Re claims 62-63 have been analyzed and rejected with respect to claims 4,6 respectively.

Re claim 66 has been analyzed and rejected with respect to claims 54.

Re claim 67 has been analyzed and rejected with respect to claim 60.

Re claim 68, the machine readable medium of claim 66, further comprising instructions for recommending at least one type of speaker ("*page 2[0021] line 13-30*")

9. Claims 9-10,15,28-29,35-36,38,64-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabinowitz et al. ("2003/0179891 A1") and saito ("6,061,648") and further in view of Johnson et al. ("US 7,184,556").

Re claim 9, the method of claim 1, However, the combined teaching of Rabinowitz et al. and Saito as a whole, fail to disclose of the

further limitation where the statistical analysis indicate flatness for the predicted transfer functions. But, Jhonson et al. disclose of a system wherein the further limitation where the statistical analysis indicate flatness for the predicted transfer functions ("*col.20 line 44-47,fig.1(16);col.13 line 51-55; col.22 line 51-54, col.16 line 16-18/parameter in achieving flattess for predicted functions*")") for purpose of controlling and improving the transient response and efficiency of speaker. Thus, taking the combined teaching of Rabinowitz and Saito and now Johnson et al. as a whole, it would have been obvious for one of the ordinary skill in the art to modify Rabinowitz by incorporating the statistical analysis indicate flatness for the predicted transfer functions for purpose of controlling and improving the transient response and efficiency of speaker.

Similarly, Re claim 10 has been analyzed and rejected with respect to claim 9 above.

Re claim 15, the combined teaching of Rabinowitz et al. and Saito as a whole, teach the method of claim 1 with the plurality of listening positions, However, they fail to teach of the wherein the statistical analysis indicate efficiency of the predicted transfer functions. However, Johnson disclose a system wherein the statistical analysis indicate efficiency of the predicted transfer functions

("Johnson,col. 15 line 11, col.3 line 10-15; see claim 9 also") for the purpose of correcting a speaker and improving the device performance. Thus, taking the combined teaching of Rabinowitz et al. and Saito and now Johnson as a whole, it would have been obvious for one of the ordinary skill in the art to modify Rabinowitz et al. and Saito as a whole, by incorporating the statistical analysis indicate efficiency of the predicted transfer functions for the purpose of correcting a speaker and improving the device performance.

Re claims 28-29 have been analyzed and rejected with respect to claims 9-10 respectively.

Re claims 35,38 have been analyzed and rejected with respect to claim 15 respectively.

Re claim 36, the combined teaching of Rabinowitz et al. and Saito and Johnson as a whole the method of claim 35, the further limitation of where efficiency is examined for predetermined frequencies ("rabinowitz, page 2[0012], fig.1 (20)").

Re claims 64-65 have been analyzed and rejected with respect to claims 9,15 respectively.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claim 48-49,51-52 rejected under 35 U.S.C. 102(e) as being anticipated by Rabinowitz et al. ("2003/0179891 A1").

Re claim 48, Rabinowitz et al. disclose a machine readable medium having software for causing a computer to execute a method ("*fig.1; page 2 [0021] line 54-64*"), the machine readable medium comprising: instructions for recording at least one potential number of speakers("fig.1(20);; instructions for recording transfer functions at least one listening position (*"fig.3(20-n)"*); instructions for modifying the transfer functions based on the potential number of speakers in order to generate predicted transfer functions ("*Page 4/(line 29-32/frequency response for the combine output speakers is possible and further predetermined frequency response in page 2[0012] line 5-6; fig.4(56)*"); and instructions for statistically analyzing the predicted transfer functions ("*FIG.1(18/ with more specifically fig.4(s56-58)/equalizing compared/analyzed to stored desired speaker*

characteristic location and update with filter; page page 5[0035] line 3-8").

Re claims 49,52 has been analyzed and rejected with respect to claim 24.

Re claim 51 has been analyzed and rejected with respect to claim 48.

8. Claims 13,33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabinowitz et al. ("2003/0179891 A1") and saito ("6,061,648") and further in view of Kitamura ("6,195,435 B1").

Re claim 13, wherein the combined teaching of Rabinowitz and Saito et al. as a whole teach the method of claim 12 with the selection of speakers, However, they fail to disclose of the limitation wherein the number of speakers for a specific predicted transfer function is selected when the specific predicted transfer

function has fewer differences in overall sound pressure level among the plurality of listening positions than other predicted transfer functions. But, Kitamura disclose of a system wherein the limitation wherein the number of speakers for a specific predicted transfer function is selected when the specific predicted transfer function has fewer differences in overall sound pressure level among the plurality of listening positions than other predicted transfer functions("*fig.1-3; col.4[0031]*") for the purpose of providing equalization on per channel basis for the speakers. Thus, taking the combined teaching of Rabinowitz and saito et al. and now Kitamura as a whole, it would have been obvious for one of the ordinary skill in the art to modify Rabinowitz and saito et al. as a whole, by incorporating the limitation wherein the number of speakers for a specific predicted transfer function is selected when the specific predicted transfer function has fewer differences in overall sound pressure level among the plurality of listening positions than other predicted transfer functions for the purpose of providing equalization on per channel basis for the speakers.

Re claim 33 has been analyzed and rejected with respect to claim 13 respectively.

9. Claims 37,39-41,45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabinowitz et al. ("2003/0179891 A1") and saito ("6,061,648") and further in view of Johnson et al. ("US 7,184,556") and further in view of Tsai ("2002/0196951").

Re claim 37, the method of claim 36, Howevever, the combined teaching of Rabinowitz et al. and Saito and now Johnson as a whole, fail to teach of the limitation wherein a number of speakers for a specific transfer function is selected when the specific transfer function has greater efficiency than other predicted transfer functions. However, Tsai disclose a system wherein the limitation wherein a number of speakers for a specific transfer function is selected when the specific transfer function has greater efficiency than other predicted transfer functions ("*fig.2; page 1[0004]; page 2[0015-0016]*") for the purpose of automatically performing equalization tuning on the speakers. Thus, taking the combined teaching of Rabinowitz et al. and Saito and Johnson and now Tsai as a whole, it would have been obvious for one of the ordinary skill in the art to modify the combined teaching of Rabinowitz et al. and Saito and now Johnson as a whole, by incorporating the limitation wherein a number of speakers for a specific transfer function is selected when the specific transfer function has greater efficiency than other

predicted transfer functions for the purpose of automatically performing equalization tuning on the speakers.

Re claim 41, has been analyzed and rejected with respect to claim 37.

Re claim 45. The method of claim 44, where a number of speakers for a specific transfer function is selected when the specific transfer function has greater output of the audio system in the predetermined frequencies than other predicted transfer functions ("see claim 37").

Re claim 39, the method of claim 38, However, the combined teaching of Rabinowitz et al. and Saito and now Johnson as a whole, fail to disclose of the explicit limitation wherein the acoustic efficiency comprises a mean overall level divided by a total drive level for the predicted transfer function. However, Official Notice is taken that such limitation of efficiency being a mean overall level divided by a total drive level is commonly known in the art, thus it would have been obvious for one of the ordinary skill in the art to have incorporated the formula concept of the acoustic efficiency comprises a mean overall level divided by a total drive level for the predicted transfer function for the purpose of equalizing output sound level.

Re claim 40, has been analyzed and rejected with respect to claim 39.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Disler Paul whose telephone number is 571-270-11187. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DP

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4/30/07